

$$10,000 = b^2$$

$$b = \sqrt{10,000}$$

$$b = 100$$

$$\log_{\frac{1}{2}} 8 = y$$

$$\left(\frac{1}{2}\right)^y = 8$$

$$\left(\frac{1}{2}\right)^{-3} = 8$$

$$\log_9 3 =$$

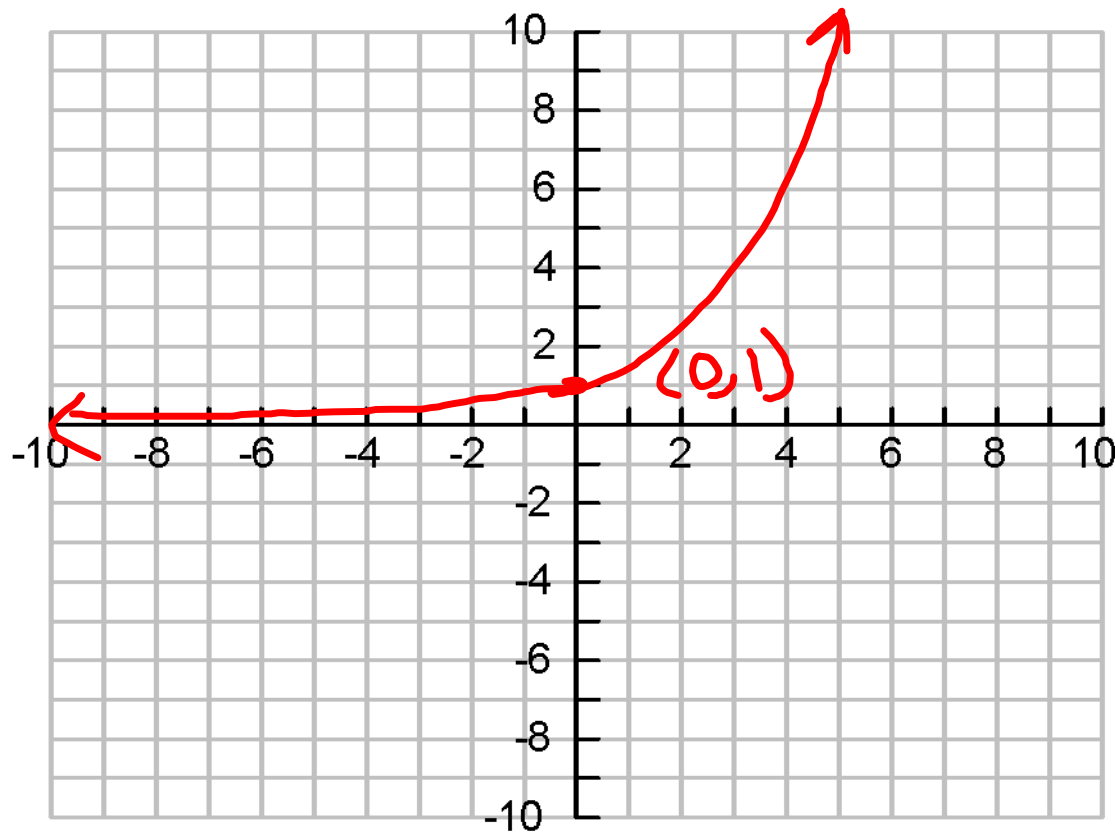
$$9^{\square} = 3$$

$$9^{\frac{1}{2}} = \sqrt{9} = 3$$

$$\log_{27} 9 =$$

$$\underline{\underline{27}}^{\boxed{\swarrow \frac{2}{3}}} = \underline{\underline{9}}$$

$$27^{\frac{2}{3}} \\ (\sqrt[3]{27})^2 = 9$$



Domain

$(-\infty, \infty)$

Range

$\{y > 0\}$

$(0, \infty)$

$$y = e^x$$

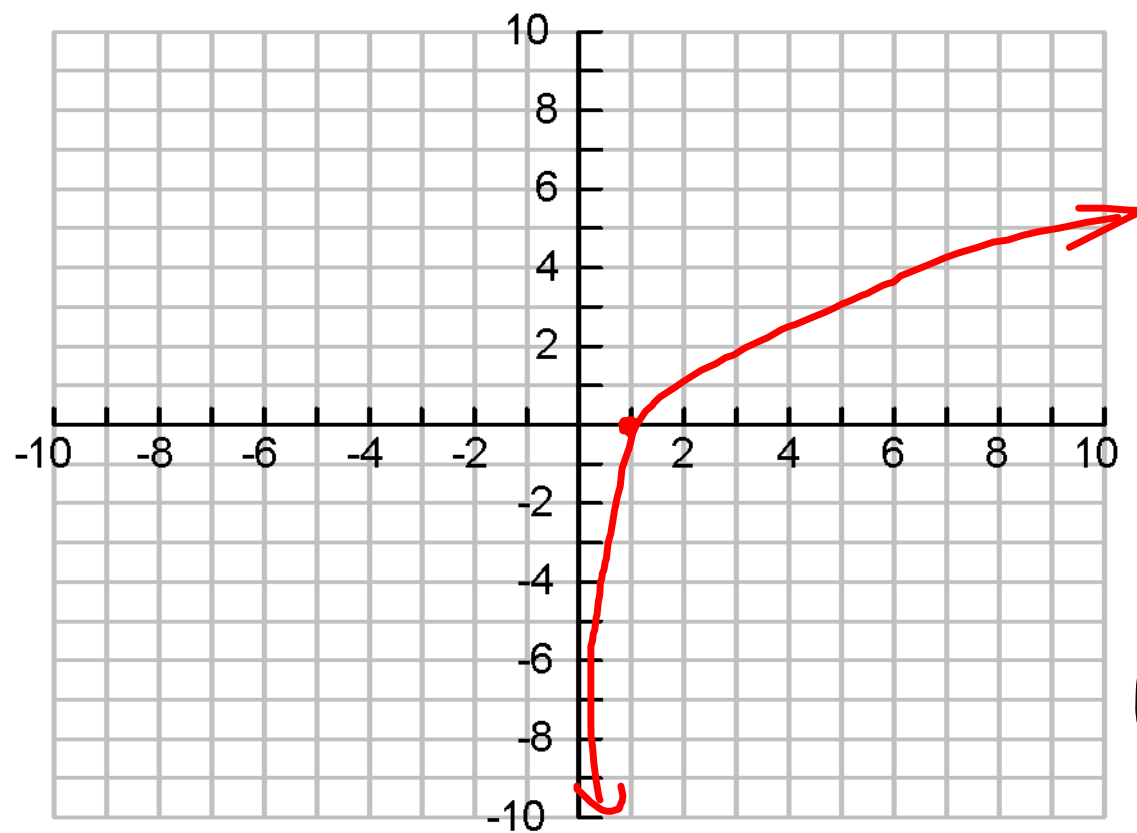
$$y = e^x$$

Inverse

$$x = e^y$$

$$y = \underline{\underline{\ln}} x$$

base  
is  
always  
e ✓



Domain

$(0, \infty)$

Range

$(-\infty, \infty)$

$$y = \ln x$$

$$y = 10^x$$

Inverse

$$x = 10^y$$

$$y = \log x$$

understood  
to be  
10



$$y = \ln x + 1 \quad \text{shift up 1}$$

$$y = \ln(x+4) \quad \text{left 4}$$

$$y = 5 \ln x \quad \text{go to } \infty \text{ faster}$$

$$y = -\ln x$$

$$y = \ln(-x)$$

reflect over x-axis

# Library of Functions

①  $y = e^x$

②  $y = \ln x$

③  $y = x$

④  $y = c$

⑤  $y = \sqrt{x}$

⑥  $y = x^2$

⑦  $y = x^3$

⑧  $y = \sqrt[3]{x}$

⑨  $y = |x|$

⑩  $y = [x]$  Greatest Int Function

$$y = \ln x^2$$

$$y = 2 \ln x$$

$$\log 3^2$$
$$2 \log 3$$

HW p.373

15, 16, 18